IN THE CLAIMS:

This listing of the claims replaces all prior versions and listings of the claims in this application.

The text of all pending claims (including any withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).

Please AMEND claims 1-14 and ADD new claims 15-17 in accordance with the following:

1. (Currently amended) An automatic blood pressure measuring instrument for measuring and displaying a blood pressure of a subject in a non-invasive manner, comprising:

a pressure sensor for obtaining a pulse wave signal from a wrist of the subject;

a pulse wave signal processing section for amplifying, filtering, and ~~noise-removing~~ removing noise from the pulse wave ~~applied from~~ signal obtained by the pressure sensor to obtain a processed analog pulse wave signal;

~~an~~ electrocardiogram ~~monitor~~ electrodes for ~~measuring a systolic blood pressure and a diastolic blood pressure and converting the measured results into electrical signals~~ detecting an electrocardiogram signal of the subject;

an electrocardiogram signal processing section for amplifying, filtering, and ~~noise-removing~~ removing noise from the ~~converted~~ electrocardiogram ~~measurement signals applied from~~ signal detected by the electrocardiogram ~~monitor~~ electrodes to obtain a processed analog electrocardiogram signal;

an A/D converting section for converting the ~~AC signals, which are applied from both the pulse wave signal processing section and the electrocardiogram signal processing section,~~ processed analog pulse wave signal and the processed analog electrocardiogram signal into ~~DC signals~~ a digital pulse wave signal and a digital electrocardiogram signal;

a controlling section for comparing and analyzing the digital pulse wave signal and the digital electrocardiogram ~~signals applied through the A/D converting section to operate~~ signal to determine parameters comprising a transition time parameter, an integral parameter, an area parameter, and a maximum amplitude parameter, and determining the blood pressure of the

subject based on the transition time parameter, the integral parameter, the area parameter, and the maximum amplitude parameter; and

a display for displaying the blood pressure of the subject ~~operated at~~ determined by the controlling section.

2. (Currently amended) ~~An~~ The automatic blood pressure measuring instrument ~~according to~~ of claim 1, further comprising:

a program storing section for storing an operation program of the controlling section; and

a data storing section for storing the digital pulse wave signal and the digital electrocardiogram ~~signals applied from the A/D converting section~~ signal for a predetermined time, and storing ~~operation~~ data ~~operated at~~ determined by the controlling section.

3. (Currently amended) ~~An~~ The automatic blood pressure measuring instrument ~~according to~~ of claim 1, wherein the pulse wave signal processing section comprises:

a first impedance matching means for matching ~~impedances~~ an impedance of the ~~inputted~~ pulse wave signal ~~and~~ to an output signal of the first impedance matching means;

a ~~pulse wave signal amplifying means~~ first low-pass filter for filtering and amplifying the ~~signals outputted from~~ output signal of the first impedance matching means to produce a filtered and amplified output signal; and

a first notch filter for removing ~~a~~ noise ~~of~~ having a commercial power frequency from the ~~signals~~ filtered and amplified ~~at~~ output signal of the ~~pulse wave signal amplifying means~~ first low-pass filter to produce the processed analog pulse wave signal.

4. (Currently amended) ~~An~~ The automatic blood pressure measuring instrument ~~according to~~ of claim 3, wherein the first notch filter comprises:

an ~~OP~~ operational amplifier for amplifying the ~~signals~~ filtered and amplified ~~at~~ output signal of the ~~pulse wave signal amplifying means and inputted~~ first low-pass filter to produce the processed analog pulse wave signal, the operational amplifier comprising an inverting terminal, a non-inverting terminal, ~~thereof~~ and an output terminal, the filtered and amplified output signal of the first low-pass filter being coupled to the non-inverting terminal of the operational amplifier, the processed analog pulse wave signal being produced at the output terminal of the operational amplifier;

~~a low-pass filter provide on~~ a negative feedback loop ~~fed from an~~ connected between the output terminal of the ~~OP~~ operational amplifier ~~back to an~~ and the inverting terminal, ~~and~~ the negative feedback loop comprising a filter for removing the noise ~~of~~ having the commercial power frequency;

a first variable resistor connected ~~in parallel with~~ between the non-inverting terminal of the ~~OP~~ operational amplifier and a ground; and

a second variable resistor ~~connected in parallel with~~ coupled between the ~~low-pass~~ filter, of the negative feedback loop and the ground;

~~whereby~~ wherein the first ~~notch filter adjusts the commercial~~ variable resistor and the second variable resistor adjust a frequency of the ~~applied signals~~ noise removed by the filter of the negative feedback loop.

5. (Currently amended) ~~An~~ The automatic blood pressure measuring instrument ~~according to~~ of claim 1, wherein the electrocardiogram signal processing section comprises:

an amplifying section for amplifying the electrocardiogram ~~signals generated from~~ signal detected by the electrocardiogram ~~monitor~~ electrodes to produce an amplified output signal; and

a filtering section for filtering and ~~noise-removing~~ removing noise from the ~~signals~~ amplified ~~at~~ output signal of the amplifying section to produce the processed analog electrocardiogram signal.

6. (Currently amended) ~~An~~ The automatic blood pressure measuring instrument ~~according to~~ of claim 5, wherein the filtering section comprises:

a fourth low-pass filter for removing ~~a~~ noise from the amplified ~~signals applied from~~ output signal of the amplifying section;

a third impedance matching means for matching an impedance of the ~~input~~ output signal ~~applied from~~ of the fourth low-pass filter ~~and~~ to an impedance of an output signal of the third impedance matching means; and

a second notch filter for removing ~~the~~ noise ~~of the~~ having a commercial power frequency ~~of~~ from the ~~signals applied from~~ output signal of the third impedance matching means to produce the processed analog electrocardiogram signal.

7. (Currently amended) ~~An~~ The automatic blood pressure measuring instrument ~~according to~~ of claim 5, wherein the electrocardiogram electrodes comprise:

a first electrocardiogram electrode for detecting the electrocardiogram signal at a location on a first side of a body of the subject; and

a second electrocardiogram electrode for detecting the electrocardiogram signal at a location on a second side of the body of the subject opposite to the first side of the body of the subject;

wherein the amplifying section comprises:

a first differential amplifier ~~including~~ comprising:

a first gain adjusting means for adjusting a gain of the electrocardiogram ~~signals measured from one side of a body of the subject,~~ signal detected by the first electrocardiogram electrode to produce a gain-adjusted output signal;

a second low-pass filter for removing a low band noise from the ~~adjusting signals applied from~~ gain-adjusted output signal of the first gain adjusting means~~,~~ to produce a filtered output signal; and

a first electrocardiogram signal amplifying means ~~from~~ for amplifying the ~~signals filtered at~~ filtered output signal of the second low-pass filter to produce a first amplified electrocardiogram signal;

a second differential amplifier ~~including~~ comprising:

a second gain adjusting means for adjusting a gain of the electrocardiogram ~~signals measured from the other side of a body of the subject,~~ signal detected by the second electrocardiogram electrode to produce a gain-adjusted output signal;

a third low-pass filter for removing a low band noise from the ~~adjusting signals applied from~~ gain-adjusted output signal of the second gain adjusting means~~,~~ to produce a filtered output signal; and

a second electrocardiogram signal amplifying means ~~from~~ for amplifying the ~~signals filtered at~~ filtered output signal of the third low-pass filter to produce a second amplified electrocardiogram signal; and

a second impedance matching means for combining the first amplified electrocardiogram signal with the second amplified electrocardiogram signal to produce the amplified output signal of the amplifying section so that the amplified output signal of the

amplifying section has an impedance matching an impedance ~~with~~ of the filtering section ~~when the amplifying signals of the first and second differential amplifiers are applied~~.

8. (Currently amended) ~~An~~ The automatic blood pressure measuring instrument ~~according to~~ of claim 7, wherein the first gain adjusting mean comprises a first input terminal having the first electrocardiogram electrode connected thereto;

wherein the second gain adjusting means comprises a second input terminal having the second electrocardiogram electrode connected thereto;

wherein the first ~~and second~~ differential ~~amplifiers~~ amplifier further comprises ~~an~~ a first inverse current preventing means ~~connected~~ coupled to ~~an~~ the first input terminal ~~to which the measurement signals are applied from electrodes of the electrocardiogram monitor~~ of the first gain adjusting means; and

wherein the second differential amplifier further comprises a second inverse current preventing means coupled to the second input terminal of the second gain adjusting means.

9. (Currently amended) An automatic blood pressure measuring method for measuring and displaying a blood pressure ~~from a wrist~~ of a subject in a non-invasive ~~method~~ manner, comprising ~~the steps of~~:

obtaining~~, amplifying and filtering~~ a pulse wave signal from ~~the~~ a wrist of the subject;

amplifying, filtering, and removing noise from the pulse wave signal to obtain a processed analog pulse wave signal;

~~measuring a systolic blood pressure and a diastolic blood pressure, and converting the measured results into electrical signals, and~~ detecting an electrocardiogram signal of the subject;

amplifying, ~~and~~ filtering, and removing noise from the ~~converted results~~ electrocardiogram signal to obtain a processed analog electrocardiogram signal;

converting ~~AC signals of~~ the processed analog pulse wave signal and the processed analog electrocardiogram signal into ~~DC signals after the amplifying and filtering steps~~ a digital pulse wave signal and a digital electrocardiogram signal;

comparing and analyzing the digital pulse wave signal and the digital electrocardiogram ~~signals converted at the converting step to operate~~ signal to determine parameters comprising a

transition time parameter, an integral parameter, an area parameter, and a maximum amplitude parameter;

determining the blood pressure of the subject based on the transition time parameter, the integral parameter, the area parameter, and the maximum amplitude parameter; and

displaying the determined blood pressure ~~operated in the operating step~~ of the subject.

10. (Currently amended) ~~An~~ The automatic blood pressure measuring method ~~according to~~ of claim 9, wherein the ~~comparing and operating step comprising the substeps of:~~

~~inputting the pulse wave and electrocardiogram signals;~~

~~comparing the pulse wave and electrocardiogram sensing signals inputted at the measuring step and operating a transition time parameter, an integral parameter, an area parameter and a maximum amplitude parameter; and~~

~~combining constants representing a change quantity of the blood pressure according to the transition time parameter, the integral parameter, the area parameter and the maximum amplitude parameter operated at the comparing and operating substep and according to changes of the parameters, and operating the combined results, and operating~~ determining of the blood pressure of the subject comprises:

determining a ~~maximum~~ systolic blood pressure of the subject based on the transition time parameter, the integral parameter, the area parameter, and the maximum amplitude parameter; and

determining a ~~minimum~~ diastolic blood pressure of the subject based on the transition time parameter and the area parameter but not the integral parameter or the maximum amplitude parameter; and

wherein the displaying of the determined blood pressure of the subject comprises:

displaying the determined systolic blood pressure of the subject; and

displaying the determined diastolic blood pressure of the subject.

11. (Currently amended) ~~An~~ The automatic blood pressure measuring method ~~according to~~ of claim 9, wherein the transition time parameter is a time interval between a maximum ~~amplitudes~~ amplitude of a waveform of the digital pulse wave signal and ~~waveforms~~ a maximum amplitude of a waveform of the digital electrocardiogram ~~signals~~ signal.

12. (Currently amended) ~~An~~ The automatic blood pressure measuring method ~~according to~~ of claim 9, wherein the integral parameter is an integral value of a data value of the digital pulse wave signal between end points of a selected ~~range~~ zone of the digital pulse wave signal.

13. (Currently amended) ~~An~~ The automatic blood pressure measuring method ~~according to~~ of claim 9, wherein the area parameter is an integral value of ~~an range~~ a difference between a data value of the digital pulse wave signal between end points of a selected zone of the digital pulse wave signal and a value of a base line joining ~~base lines on both sides~~ points where a waveform of the digital pulse wave signal intersects the end points of the selected ~~range~~ zone of the digital pulse wave signal.

14. (Currently amended) ~~An~~ The automatic blood pressure measuring method ~~according to~~ of claim 9, wherein the maximum amplitude parameter is a maximum amplitude of a waveform of the digital pulse wave signal within a ~~designated~~ selected zone of the ~~integral and area parameters~~ digital pulse wave signal.

15. (New) The automatic blood pressure measuring instrument of claim 1, wherein the controlling section determines a systolic blood pressure of the subject based on the transition time parameter, the integral parameter, the area parameter, and the maximum amplitude parameter;

wherein the controlling section determines a diastolic blood pressure of the subject based on the transition time parameter and the area parameter but not the integral parameter or the maximum amplitude parameter; and

wherein the display displays the systolic blood pressure of the subject determined by the controlling section, and displays the diastolic blood pressure of the subject determined by the controlling section.

16. (New) The automatic blood pressure measuring instrument of claim 15, wherein the controlling section determines the systolic blood pressure of the subject using the following systolic blood pressure determination algorithm:

$$P = 919.121 \cdot Ar + 17.157 \cdot Max - 98.26 \cdot Int + 161.736 \cdot \Delta T$$

where Ar is the area parameter, Max is the maximum amplitude parameter, Int is the integral parameter, and ΔT is the transition time parameter; and

wherein the controlling section determines the diastolic blood pressure of the subject using the following diastolic blood pressure determination algorithm:

$$P = 146.161 - 78.903 \cdot \Delta T - 442.904 \cdot Ar$$

where ΔT is the transition time parameter and Ar is the area parameter.

17. (New) The automatic blood pressure measuring method of claim 10, wherein the determining of the systolic blood pressure of the subject comprises determining the systolic blood pressure of the subject using the following systolic blood pressure determination algorithm:

$$P = 919.121 \cdot Ar + 17.157 \cdot Max - 98.26 \cdot Int + 161.736 \cdot \Delta T$$

where Ar is the area parameter, Max is the maximum amplitude parameter, Int is the integral parameter, and ΔT is the transition time parameter; and

wherein the determining of the diastolic blood pressure of the subject comprises determining the diastolic blood pressure of the subject using the following diastolic blood pressure determination algorithm:

$$P = 146.161 - 78.903 \cdot \Delta T - 442.904 \cdot Ar$$

where ΔT is the transition time parameter and Ar is the area parameter.